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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/854,853 | 05/14/2001 | Itai Dror | 6727/0J351US0 | 8333 |

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EXAMINER

ARANI, TAGHI T

ART UNIT PAPER NUMBER

2131

DATE MAILED: 10/05/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/854,853

Applicant(s)

DROR ET AL.

Examiner

Taghi T. Arani

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 May 2001.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-40 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-5, 17, 19, 20, 31 and 37 is/are rejected.
- 7) ☐ Claim(s) 6-16, 18 and 21-29, 32-36, 38-40 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 14 May 2001 is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 8/8/01, 2/4/02.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

1. Claims 1-40 have been examined and are pending

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 19 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claims 19 recites the limitation "the Y_0 value", "the multiplicand", "the B multiplier", "the accumulation device", and "the adder in Claim 19. Claim 20 in addition recites "the device", "the A_i register" and "the B stream".

There is insufficient antecedent basis for these limitations in the claims.

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

3. Claim 19 fails to interrelate essential elements of the invention as defined by the Applicant in the specification, amounting to a gap between the necessary structural connections. See MPEP § 2172.01.

Dependent claim 20 inherit the 35 U.S.C. 112 issues of the independent claim 19 and may not be further considered on its individual merit.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and, *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

4. Claims 1-5, 17, 31, 37 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1-4, 6 and 18 of U.S. Patent No. 6,185,596. Although the conflicting claims are not identical, they are not patentably distinct from each other because:

Claims 1-5, 17, 31 and 37 of the instant application recite identical limitations as claims 1-4, 6 and 18 of the patent except:

independent claim 1 of the instant application recite an "accumulation device" which substantially performs functions as the recited "carry save adder" of claim 1 of the patent and "an apparatus to anticipate the 1 bit k character serial input Y_0 multiplier values" which performs identical function as the "detect device" recited in claim 6 of the patent operative to anticipate, on only one bit, whether the modulus value is to be added into the carry save adder.

Similarly, claims 2-5 of the instant application recite substantially identical features as claims 2-4 and 6 of the patent.

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Claims 17 and 31 of the instant application recite identical limitations as claim 18 of the patent except:

an “accumulation device” (recited in claims 17 and 31) which substantially performs functions as the recited “carry save adder” of the claim 18 of the patent and “a first emitting zero forcing Y_0 detect device” (recited in claim 17) with performs identical functions as “LS zero forcing detector device” of claim 18 of the patent.

Claims 37 of the instant application is a method claim corresponding to the apparatus claim 31 in broader scope.

Therefore, claims 1-4, 6 and 18 of the patent anticipate claims 1-5, 17, 31 and 37 of the instant application and claims 1-5, 17, 31 and 37 of the instant application are not patentably distinct from claims 1-4, 6 and 18 of the patent.

Allowable Subject Matter

5. Claims 6-16, 18, 21-30, 32-36, 38-40 are objected to as being dependent upon a rejected base claims, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Conclusion

Prior arts made of record, not relied upon:

US Patent No. 5,513,133 to Cressel et al. is directed to a compact synchronous microelectronic peripheral machine for standard microprocessors with means for proper clocking and control, has as essential elements: three main subdivided, switched and docked shift registers, B, S, and N; two only multiplexed serial/parallel multipliers; borrow detectors, ancillary subtractors and adders; delay registers and switching elements; all of which embody a

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totally integrated concurrent and synchronous process approach to modular multiplication, squaring, and exponentiation. A method for carrying out modular multiplication, wherein the multiplicand A, the multiplier B and the modul, N, comprise m characters of k bits each, the multiplier not being greater than the modulus, is also described, wherein the multiplicand can be much larger than the modulus. It is demonstrated how the device can be used as a large number processor in the normal field of numbers.

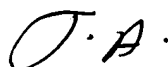
US Patent No. 5,499,299 to Takenaka et al. discloses a modular arithmetic unit which comprises an input register, a multiple computing section, an adder, and a correcting section. There is provided a multiple table in which multiples of a modulo N are stored to correspond with low-order some bits of an input number T in the input register. The low-order some bits of the input number T are used to look up its corresponding multiple of the modulo N in the multiple table. The adder adds the multiple of the modulo N retrieved from the multiple table and the contents of the input register. This addition is performed n times. The contents of the input register are updated with high-order predetermined bits of the sum in the adder each time addition is performed in the adder. The correcting section makes a correction on the result t of addition by the adder after n additions have been performed.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Taghi T. Arani whose telephone number is (571) 272-3787. The examiner can normally be reached on 8:00-5:30 Mon-Fri.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Ayaz Sheikh can be reached on (571) 272-3795. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).




Taghi T. Arani, Ph.D.

Examiner

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9/29/2005



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